NDOW 1992

NEVADA DEPARTMENT OF WILDLIFE
1992 USFS-NDOW COOPERATIVE STREAM SURVEY AND INVENTORY

OBJECTIVE

To conduct intensive habitat and fish population surveys on about 100 miles of selected streams in the West Fork Jarbidge River Drainage, eastslope of the Ruby Mountains, and Rock Creek Drainage.

PROCEDURE

The USFS-NDOW Cooperative Stream Survey and Inventory Team in NDOW's administrative Region II consisted of the principle investigator serving as crew leader and three temporary personnel. The summer help had no previous fish or wildlife survey experience. More qualified personnel were not available for hire due to the delay in State hire authorization. The field season extended from June 8 through September 10 for all but two summer hires who were only able to work until August 20. Hence, about 21% of the surveyed sites were completed by the crew leader and one assistant. A four person crew surveyed all but one of the remaining sites.

Stream survey methodology followed procedures outlined for the GAWS Level III survey in the USFS-Region 4 Habitat Surveys Handbook. On locating a sample station from the preplotted, USGS 7.5 minute topographic map, the team would conduct a one-pass fish capture effort with a Dirigo 700 backpack electroshocker over a distance of 100 feet. Captured fish were placed in a bucket, identified, measured (fork length), weighed and returned to the stream. Game fish were examined for relative body condition. Fish seen escaping the electric field or otherwise lost during capture or processing were recorded. Relative quantitative and qualitative information on aquatic invertebrates were assessed at each survey site via substrate particle and stream observation. Habitat transects began 100 feet upstream of the beginning of each station.

Stream measurements to determine discharge were taken over a uniform length of flowing water where, such an area could be found at a station. Stream velocity was determined by the average of several floating object time trials. Air and water temperature were taken at each station using a pocket mercury thermometer.

Fish population data was summarized for each stream. GAWS habitat data was entered and analyzed on IBM compatible PC and backed-up on floppy disc. A report will be prepared for each surveyed stream. Computer data, reports and slides will be provided to the Humboldt National Forest upon completion.

FINDINGS AND ANALYSIS

Intensive surveys were conducted only within the Jarbidge River Drainage on Humboldt National Forest lands. Twelve individual streams and two stream forks encompassing 41.6 miles were surveyed intensively. Another four streams and 5.3 miles were oculared and declared to have insufficient flow for survey (Appendix I). Native rainbow/redband trout were found in ten named creeks or forks and in an unnamed tributary of Deer Creek. Total occupied range above the Forest Boundary amounted to 22.0 miles. One bull trout was collected at a sample station in Jack Creek and another bull trout that was seen between two stations in upper Pine Creek was collected for identification. Bull Trout were found in the two tributaries of the West Fork of the Jarbidge River that had the largest flow volume of the streams surveyed. Sculpin were sampled only at the lowest sample site in Pine Creek.

The Snake River Basin streamflow forecast made on April 1, 1992, was 30% of average (USDA, 1992). Of particular significance was that 1992 is only one of seven dry years in which Bear Creek (7800 ft elevation) was without snow on May 1 (Elko Free Press, May 9, 1992). Throughout the early to mid-June survey of Bear Creek the streamflow was described as being "low" Maximum measured discharge during the survey of Bear Creek was 1.38 cfs. Of surveyed streams only lower Jack Creek (1.39 cfs) and lower Pine Creek (1.70 cfs) had greater discharges as measured on August 12, 1992 and September 1, 1992, respectively. Drought conditions are known to have a depressing effect on fish standing crops.

The calculated fisheries Habitat Condition Index (HCI) rating for the 14 intensively surveyed streams and one unnamed tributary is summarized below:

HCI % OPTIMUM	RATING	NO. OF STREAMS	NO. OF MILES	% OF MILES
50-59	Poor	4	11.1	26.9
60-69	Fair	6	21.2	51.3
70-79	Good	5	9.0	21.8

All of the "poor" rated streams were located within the USFS, Buck Creek C&H grazing allotment. Streambank damage caused by cattle was "heavy" in the Buck Creek drainage and along Dorsey Creek. Moderate damage was evident along Columbet Creek and Corral Creek which are in the same grazing allotment. Ungulate damage was negligible in all other surveyed streams. Other than Deer Creek, livestock grazing is not allowed in the West Fork Jarbidge River Drainage.

Riparian condition scores mirrored ungulate damage ratings. Those streams having negligible damage were nearly all (96%) rated "good". Contrarily, sixty-four percent of the streams that were damaged by livestock had riparian zones in "fair" condition. Only two sites (9%) rated "good" and six sites were in "poor" or "very poor" condition.

CONCLUSIONS

With the exception of Deer Creek, the streams within the Buck Creek C&H Allotment are being deleteriously impacted by cattle.

Bull trout have only a minimal presence in two tributaries of the West Fork Jarbidge River. The specimen found in Pine Creek represents a previously unknown stream population of bull trout. A bull trout was last collected in Jack Creek on August 16, 1974.

RECOMMENDATIONS

Stream surveys should continue in 1993 in the East Fork Jarbidge River Drainage to further delineate bull trout distribution and habitat condition.

The Buck Creek C&H Allotment management needs revised so as to alleviate abuses on the stream and riparian areas and allow much needed improvements.

APPENDIX I
SUMMARY OF THE 1992 USFS-NDOW COOPERATIVE STREAM SURVEY AND INVENTORY, NDOW REGION II (ELKO COUNTY)

DRAINAGE[1]	STREAM	SURVEY MILES	HAB STA	HCI	PERCENT UNGULATE USE	DISCHARGE RANGE(CFS)	FISH POP STATIONS	SPECIES[2] PRESENT	TROUT /MILE	OCCUPIED MILES	PERCEN EMBEDDEDNES
WFJRD	Bear Ck	4.3	7	78.5	0	0.30-1.38	6	RB	264	1.4	5.9
WFJRD	Buck Ck	3.4	5	52.1	50.2	0.03-0.13	5	RB	11	3.4	78.8
BCD	East Fork	1.6	3	56.5	18.3	0.08-0.17	3	RB	53	1.6	34.4
BCD	West Fork	3.0	3	51.5	52.3	0.08-0.14	3	RB	633	0.9	59.5
JRD	Columbet Ck	1.3	2	66.3	43.7	0.01-0.08	2	None	-	0	39.9
BCD	Corral Ck	4.0	4	63.6	37.3	0.03-0.13	4	RB	48	2.3	37.3
BCD	Cow Ck	2.0	0	--	--	Dry	0	None	-	0	
WFJRD	Deer Ck	4.4	5	65.8	3.5	0.27-0.82	5	RB	513	4.4	18.4
	Unnamed Trib	0.9	2	70.8	16.1	0.18-0.21	2	RB	290	0.8	16.3
JRD	Dorsey Ck	3.1	5	50.7	50.2	0.06-0.20	5	None	-	0	46.1
CCD	Fawn Ck	1.3	0	--	--	Dry	0	None	-	0	
WFJRD	Fox Ck	2.5	4	78.5	0	0.20-0.29	4	RB	264	0.7	10.7
WFJRD	Jack Ck	5.0	6	66.1	0.6	0.45-1.39	6	RB	633	2.7	3.6
								BT	25	1.0	
JCD	Jenny Ck	0.8	2	72.3	0	0.06-0.17	2	RB	106	0.6	12.4
JCD	L. Jack Ck	0.5	1	72.1	0	0.10	1	None	-	0	0
WFJRD	Pine Ck	5.5	7	63.8	0	0.14-1.70	7	RB	449	3.2	12.8
								BT,SC		0.5	
PCD	West Fork	0.9	0	--	-	Minimal	0	None	-	0	
BCD	Sanovia Ck	1.1	0	--	-	Dry	0	None	-	0	
WFJRD	Sawmill Ck	1.0	2	61.4	0	0.13-0.25	2	None	-	0	14.4
	Totals	**46.6**	**58**				**57**				

1. Drainage Abbreviations:
BCD - Buck Creek
CCD - Columbet Creek
JCD - Jack Creek
JRD - Jarbidge River-Idaho
WFJRD - West Fork Jarbidge River

2. Species Abbreviations:
BT bull trout
RB redband/ rainbow trout
SC sculpin

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Table I

WEST FORK JARBIDGE RIVER
Fish Population Survey History

Date	Number Samples	Gamefish/mile Estimates	Average Fish Per Mile Estimates by Species + (No. Transects Species Occured) Rainbow	Whitefish	Sculpin	Dolly Varden	Cutthroat	Brook
8/15/54	6	99.26	131.3 (3)	180.2 (3)	?	17.3 (1)	43.8@ (2)	123.7@ (3)
10/3/61	7	171.50	436.0 (7)	25.8 (2)	? (2)	52.8 (1)	- (0)	- (0)
8/24/72	4	223.73	651.9 (4)	10.5 (1)	288.6(3)	8.8 (1)	- (0)	- (0)
11/17/74	6	268.40	528.0 (6)	8.8 (1)	193.6(6)	- (0)	- (0)	- (0)
9/24/75	7	449.50	765.8 (7)	133.2 (2)	565.7(7)	- (0)	- (0)	- (0)
10/26/79	5 Chan.	26.12	33.8 (2)	37.2 (3)	84.9(4)	7.3 (1)	- (0)	- (0)
10/26/79	5 Unch.	174.93	507.6 (5)	12.99(2)	216.8(5)	4.2 (1)	- (0)	- (0)

@ Cutthroat and brook were stocked during 1954, but not after.